Mission-Specific Network Engineering (MSNE)

in support of:

Naval Air Systems Command (NAVAIR) Naval Air Warfare Center Aircraft Division (NAWCAD), Special Communications Mission Solutions (SCMS), and other non-NAVAIR Organizations

Task Order

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C.1 BACKGROUND

The Naval Air Warfare Center Aircraft Division (NAWCAD), Special Communications Mission Solutions (SCMS) Division 4.11.4 provides full spectrum Command, Control, Communications, Computers, Combat Systems, Intelligence, Surveillance, and Reconnaissance (C5ISR) technical support to the warfighter in the Continental United States (CONUS), Outside the Continental United States (OCONUS), and in hazardous areas. SCMS supports worldwide Department of Defense (DoD), Executive Branch, and other Federal agencies that act as sponsors for individual projects. The support provided by SCMS can include any portion of the engineering lifecycle from requirements definition through sustainment. SCMS' systems are developed using a rapid engineering process and can consist of Commercial-off-the-shelf (COTS) solutions, Government-off-the-shelf (GOTS) solutions, fully customized solutions, or any combination of the three. This cradle-to-grave support ensures interoperability, supportability, and connectivity among fielded equipment. SCMS employs a professional services workforce that possesses subject matter expertise across a broad range of disciplines to meet its sponsor agency's requirements. SCMS projects are led by an SCMS Government Project Lead (GPL) who serves as a lead project integrator and is responsible for all programmatic and technical aspects of assigned projects, including the selection and leadership of Integrated Project Teams (IPTs) employed to execute the projects. SCMS IPTs are made up of SCMS personnel as well as contractors providing engineering, production, and technical expertise. The IPT coordinates with Federal agency sponsors, system users, and material vendors in order to produce a fully integrated C5ISR solution which meets or exceeds requesting sponsor's requirements.

C.1.1 PURPOSE

The purpose of this TO is to provide SCMS with the technical and engineering support needed for the Mission-Specific Network Engineering (MSNE) program. MSNE systems can range from stand-alone systems up to global, integrated communication solutions that combine satellite and terrestrial networks supporting converged voice, video, and data, and may take various forms including portable, mobile, and fixed-site applications.

C.1.2 AGENCY MISSION

SCMS is a Navy Working Capital Fund organization, which develops and delivers best value solutions to the warfighter to meet real-world missions. This acquisition will provide the engineering and technical expertise needed by SCMS GPLs to ensure MSNE systems meet or exceed the sponsor agency's requirements and are delivered quickly and efficiently.

C.2 SCOPE

The scope for this acquisition is to provide engineering and technical expertise to support MSNE projects at different stages of the engineering lifecycle for SCMS and non-NAVAIR organizations. Technical expertise shall be required in the areas of system development, network engineering (design and implementation of computer networks), network administration, database administration, operations centers, data centers, conference rooms, control systems, audio/video systems (classified and unclassified), Information Assurance (IA), cybersecurity, radio frequency and satellite communications, and software/application and database development. The functional support required will vary with each project as sponsor organizations will have different needs depending on the requirement.

Contractor travel will be required for some MSNE projects. This travel can be both CONUS and OCONUS and can include travel to hazardous duty locations. Pre-deployment and travel requirements will vary based on the project sponsor's requirements. Travel will be required to take place in accordance with each sponsor's travel policies and processes.

C.3 CURRENT ENVIRONMENT

MSNE operates as a project-based environment with requirements for MSNE capabilities being requested by sponsors. MSNE projects are rapid in nature, vary in duration and multiple projects may be worked concurrently along with new projects being continuously added throughout the life of the TO. This requires MSNE contractor personnel to be matrixed across multiple projects, which necessitates the effective management of personnel to ensure availability of technical and engineering resources when needed. MSNE projects may span the entire systems engineering life cycle or some portion thereof. MSNE projects generally follow the SCMS Systems Engineering (SE) and Project Management (PM) processes (Section J, Attachments X and Y), but these processes are tailored based on project schedule and/or sponsor requirements. The GPL identifies the required processes which must be followed for each separate MSNE requirement. As a result of the project-based nature of this work, contractor support increases and decreases for discrete periods of time as necessary to complete project tasks.

Engineering and technical expertise is utilized by SCMS GPLs as part of a total solution provided by an SCMS IPT. Because the PWS requirements being accomplished under this TO are often tightly coupled with the efforts of other IPT members, the MSNE contractor shall collaborate and cooperate with other IPT members including production and support contractors, in order to deliver high quality MSNE systems which meet or exceed sponsor expectations.

MSNE projects utilize Project Requirements Sheet (PRS) (Section J, Attachment P) as the basis of understanding between the Government and the contractor for individual projects under the scope and the tasks of the MSNE TO. The PRS defines the scope, schedule, cost, material, constraints, objectives, and ancillary issues surrounding the particular MSNE projects. The MSNE contractor supports many concurrent projects throughout the period of performance of this TO. The projects vary widely in size, scope, and complexity and are based on individual sponsor requirements. SCMS supports approximately 100 MSNE projects of various size, scope, and complexity per option period requiring a range of engineering and technical skills. See Section J, Attachment AF for SCMS Anticipated Initial Projects List which will need to be supported during the base year of the Task Order.

C.4 OBJECTIVE

The objective of this TO is to provide the engineering and technical expertise needed to establish SCMS as the premier provider of C5ISR systems in support of sponsor agency's unique mission requirements. Support includes:

a. Project Management
b. Requirements Analysis and Recommendation
c. Solutions Recommendation
d. Integration, Installation, Verification, and Validation
e. Operation and Sustainment

f. Research, Development, Test, and Evaluation

C.5 TASKS

The MSNE TOR is structured so that seamless and effective support can be provided to a variety of engineering and technical solutions provided by this TO. The entire TOR is the program and each PRS will represent a project nested in the scope of the PWS. Task 1 Program Management, Task 2 Transition-In, and Task 3 Transition-Out are tasks which will support the entirety of the program. Tasks 4-8 representing the MSNE engineering lifecycle and As-Needed support, shall be used to support specific MSNE projects within the scope of the PWS as stipulated by individual PRSs.

The contractor shall support the following Task Areas:

a. Task 1: Program and Project Management
b. Task 2: Transition-In
c. Task 3: Transition-Out
d. Task 4: Requirements Analysis and Recommendation
e. Task 5: Solutions Recommendation
f. Task 6: Integration, Installation, Verification and Validation
g. Task 7: Operations and Sustainment Support
h. Task 8: Research, Development, Test and Evaluation

The Government will continually monitor the contractor's performance with the use of Performance Metrics which will be part of the AFDP (Section J, Attachment D). The AFDP will be updated as SCMS requirements change and as new projects are undertaken for new sponsors.

C.5.1 TASK 1 – PROGRAM AND PROJECT MANAGEMENT

The contractor shall provide program and project management support under this TO. This includes the management and oversight of all activities performed by contractor personnel, including subcontractors, to satisfy the requirements identified in this PWS. As new projects are identified, the contractor shall provide initial estimates for level of effort, and schedules to be included into the PRS (Section F, Deliverable 47). The contractor shall identify a Program Manager (PgM) by name who shall provide management, direction, administration, quality assurance, and leadership in the execution of this TO.

C.5.1.1 SUBTASK 1 – ACCOUNTING FOR CONTRACTOR MANPOWER REPORTING

The contractor shall report ALL contractor labor hours (including subcontractor labor hours) required for performance of services provided under this contract for SCMS via a secure data collection site. The contractor is required to completely fill in all required data fields using the following web address: http://www.ecmra.mil/.

Reporting inputs will be for the labor executed during the period of performance during each Government Fiscal Year (FY), which runs October 1 through September 30. While inputs may be reported any time during the FY, all data shall be reported no later than October 31 of each calendar year (Section F, Deliverable 01).

Contractors may use Extensible Markup Language (XML) data transfer to the database server or fill in the fields on the website. The XML direct transfer is a format for transferring files from a contractor's systems to the secure web site without the need for separate data entries for each required data element at the website. The specific formats for the XML direct transfer may be downloaded from the web.

C.5.1.2 SUBTASK 2 – TASK ORDER KICK-OFF MEETING

The contractor shall schedule, coordinate, and host a TO Kick-Off Meeting at the location approved by the Government (Section F, Deliverable 02). The meeting will provide an introduction between the contractor personnel and Government personnel who will be involved with the TO. The meeting will provide the opportunity to discuss technical, management, and security issues, as well as travel authorization and reporting procedures. At a minimum, the attendees shall include Key contractor Personnel, representatives from SCMS, other relevant Government personnel, and the Federal Systems Integration and Management Center (FEDSIM) Contracting Officer's Representative (COR).

At least three days prior to the TO Kick-Off Meeting, the contractor shall provide a TO Kick-Off Meeting Agenda (Section F, Deliverable 03) for review and approval by the FEDSIM COR and the Technical Point of Contact (TPOC) prior to finalizing. The agenda shall include, at a minimum, the following topics/deliverables (Section F, Deliverables 09, 13, and 23):

a. Points of contact (POCs) for all parties
b. Draft Program Management Plan (PMP) (Section F, Deliverable 09) and discussion including schedule, tasks, etc.
c. Draft Quality Control Plan (QCP) (Section F, Deliverable 13)
d. Personnel discussion (i.e., roles and responsibilities and lines of communication between contractor and Government)
e. Staffing Plan and status
f. Updated Transition-In Plan (Section F, Deliverable 23) and discussion
g. Security discussion and requirements (i.e., building access, badges, Common Access Cards (CACs))
h. Invoicing considerations
i. Transition discussion
j. Earned Value Management (EVM) Plan, if required

The Government will provide the contractor with the number of Government participants for the TO Kick-Off Meeting and the contractor shall provide sufficient copies of the presentation for all present. The contractor shall draft and provide a TO Kick-Off Meeting Minutes report (Section F, Deliverable 04) documenting the TO Kick-Off Meeting discussion and capturing any action items.

C.5.1.3 SUBTASK 3 – OPERATIONS SECURITY (OPSEC) PLAN:

The contractor shall develop, implement, and maintain the contractor's OPSEC plan to protect controlled unclassified and classified activities, information, equipment, and material used or developed by the contractor and any subcontractor during performance. This plan may include Information Assurance and Communications Security (COMSEC). The contractor's OPSEC plan

shall be in accordance with National Security Decision Directive (NSDD) 298 and, at a minimum, shall include:

a. Assignment of responsibility for the contractor's OPSEC direction and implementation.
b. Issuance of procedures and planning guidance for the use of OPSEC techniques to identify vulnerabilities and apply applicable countermeasures.
c. Establishment of OPSEC education and awareness training.
d. Provisions for management, annual review, and evaluation of the contractor's OPSEC programs.
e. Flow down of OPSEC requirements to subcontractors when applicable.

The contractor's OPSEC plan, which includes details on implementation and compliance with the above requirements, will be due 30 days after TOA (Section F, Deliverable 5).

C.5.1.4 SUBTASK 4 – MONTHLY STATUS REPORT (MSR)

The contractor shall develop and provide an MSR (Section J, Attachment F) (Section F, Deliverable 06). The MSR shall include the following:

a. Activities during reporting period, by project (include on-going activities, new activities, and activities completed, and progress to date on all above mentioned activities). Each section shall start with a brief description of the project.
b. Problems and corrective actions taken. Also include issues or concerns and proposed resolutions to address them.
c. Personnel gains, losses, and status (security clearance, etc.).
d. Government actions required.
e. Schedule (show major tasks, milestones, and deliverables; planned and actual start and completion dates for each).
f. Summary of trips taken, conferences attended, etc.
g. EVM statistics per project (if required).
h. Accumulated invoiced cost for each CLIN up to the previous month.
i. Projected cost of each CLIN for the current month.
j. Project issues, risks, and mitigations.
k. Change Management Issues.
l. The contractor shall deliver a Workforce Reporting Attachment via email to the designated TPOC. The Workforce Reporting shall include a labor mix report consisting of name, labor categories, total hours charged for the month, and location. The contractor shall also include the number of gains and losses within that month. The deliverable shall be in Microsoft Excel 2010 or later format.

C.5.1.5 SUBTASK 5 – CONVENE TASK ORDER TECHNICAL STATUS MEETINGS

The contractor PgM shall convene a monthly TO Technical Status Meeting with the TPOC, FEDSIM COR, and other Government stakeholders (Section F, Deliverable 07) as requested. The purpose of this meeting is to inform stakeholders of the monthly program and project

activities and MSR, provide opportunities to identify other activities and establish priorities, and coordinate resolution of identified problems or opportunities. The contractor PgM shall provide Monthly Technical Status Meeting Minutes including attendance, issues discussed, decisions made, and action items assigned, to the FEDSIM COR within five workdays following the meeting (Section F, Deliverable 08).

C.5.1.6 SUBTASK 6 – PREPARE A PROGRAM MANAGEMENT PLAN (PMP)

The contractor shall document all support requirements in a PMP. The contractor shall provide the Government with a draft PMP (Section F, Deliverable 09) on which the Government will make comments. The final PMP (Section F, Deliverable 10) shall incorporate the Government's comments.

The PMP shall:

a. Describe the proposed TO management approach.
b. Describe the contractor's process for integrating projects into the PMP.
c. Contain detailed Standard Operating Procedures (SOPs) for all tasks.
d. Provide for an overall Work Breakdown Structure (WBS) with a minimum of three levels and associated responsibilities and partnerships between Government organizations.
e. Describe in detail the contractor's approach to risk management under this TO.
f. Describe in detail the contractor's approach to communications, including processes, procedures, communication approach, and other rules of engagement between the contractor and the Government.
g. Include milestones, tasks, and subtasks required in this TO.
h. Include the contractor's Baseline QCP and EVM Plan (if applicable).
i. Describe the proposed individual project execution approach tailored to SCMS' Systems Engineering Management Plan (SEMP) (Section J, Attachment Z).
j. Describe the contractor's Change Management Process for managing all program and project changes.

C.5.1.7 SUBTASK 7 – UPDATE THE PMP

The PMP is an evolutionary document that shall be updated annually at a minimum (Section F, Deliverable 11). The contractor shall work from the latest Government-approved version of the PMP.

C.5.1.8 SUBTASK 8 – PREPARE TRIP REPORTS

The Government will identify the need for a Trip Report when the request for travel is submitted (Section F, Deliverable 12). The contractor shall keep a summary of all long-distance travel including, but not limited to, the name of the employee, location of travel, duration of trip, and Point of Contact (POC) at travel location. Trip Reports shall also contain Government approval authority, total cost of the trip, a detailed description of the purpose of the trip, and any knowledge gained. At a minimum, Trip Reports shall be prepared with the information provided in Section J, Attachment G.

C.5.1.9 SUBTASK 9 – PROVIDE QUALITY CONTROL PLAN (QCP)

The contractor shall provide a draft QCP at the TO Kick-Off Meeting (Section F, Deliverable 13) and provide a final baseline QCP as required in Section F (Section F, Deliverable 14). The contractor shall periodically update the QCP, as required in Section F (Section F, Deliverable 15), as changes in program processes are identified.

Within the QCP, the contractor shall identify its approach for providing quality control in meeting the requirements of the TO. The contractor's QCP shall describe its quality control methodology for accomplishing TO performance expectations and objectives. The contractor shall fully discuss its validated processes and procedures that provide high quality performance for each Task Area. The QCP shall describe how the processes integrate with the Government's requirements.

C.5.1.10 SUBTASK 10 – PROCUREMENT SUPPORT

The contractor shall provide technical support to identify procurement sources for software and equipment necessary to meet project requirements. The contractor shall be capable of interfacing with and updating the Government's hardware and software acquisition management systems to upload/download data on each item procured under the Tools and ODCs CLINs, print reports/forms, and receive and transfer digital files with Government systems in conjunction with the required Task Areas. When required, the contractor shall purchase software, equipment and other required material, and provide material management, including maintaining a list of required items, monitoring and tracking delivery, and maintaining accurate inventory records using the Government's tracking system. See Section H.16 and H.17 for material procurement requirements.

C.5.1.11 SUBTASK 11 – COST ESTIMATE DEVELOPMENT

As requirements are generated, the contractor shall produce and provide the TPOC and FEDSIM COR with a Rough Order of Magnitude (ROM) or a cost estimate to complete the required effort (Section F, Deliverable 46). The ROM shall include a total estimated labor, equipment, materials, ODCs, and travel costs to accomplish the effort. Within the ROM, the contractor shall identify the estimated labor categories, associated labor rates, and LOE necessary to complete the effort to arrive at a total estimated labor cost. Additionally, the contractor shall also provide a breakout of all estimated equipment, material, and ODCs and travel costs. The Government will provide the contractor with a ROM completion/submission date for each ROM request when it is provided to the contractor. Within two days of receiving the Government's PRS or request for ROM development, the contractor shall notify the TPOC and the FEDSIM COR in writing if the request is not detailed enough to enable completion of the ROM and provide the TPOC and FEDSIM COR with details regarding what additional information is needed in order to generate the ROM.

C.5.1.12 SUBTASK 12 – FINANCIAL REPORTING

The contractor shall provide Financial Reporting (Section F, Deliverable 16) at a minimum semi-monthly in accordance with Section J, Attachment AA of the TOR.

C.5.1.13 SUBTASK 13 – PROJECT KICK-OFF MEETINGS

The contractor shall schedule, coordinate, and host a Project Kick-Off Meeting at the location approved by the Government (Section F, Deliverable 17) after the issuance of a PRS. At the Government's discretion, the Project Kick-Off Meeting may be held virtually. The meeting will provide an introduction between the contractor personnel and Government personnel who will be involved with the project. The meeting will provide the opportunity to discuss technical, management, and security issues, as well as travel authorization and reporting procedures required for the project. At a minimum, the attendees shall include Key contractor Personnel, representatives from SCMS, other relevant Government personnel, and the FEDSIM COR.

Prior to the Project Kick-Off Meeting, the contractor shall provide a Project Kick-Off Meeting Agenda (Section F, Deliverable 18) for review and approval by the SCMS GPL prior to finalizing. The agenda shall include, subject to guidance from the GPL, the following topics/deliverables:

a. POCs for all parties
b. Draft Project Plan (PP) (Section F, Deliverable 20) and discussion

The Government will provide the contractor with the number of Government participants for the Project Kick-Off Meeting and the contractor shall provide sufficient copies of the presentation for all present.

The contractor shall draft and provide a Project Kick-Off Meeting Minutes report documenting the Project Kick-Off Meeting discussion and capturing any action items (Section F, Deliverable 19).

C.5.1.14 SUBTASK 14 – PREPARE A PROJECT PLAN (PP)

The contractor shall provide a PP, the contents of which will be subject to guidance from the SCMS GPL, for each assigned PRS. The requirements for each PP will be tailored to match the complexity of the project requirements. The contractor shall provide the Government with a draft PP (Section F, Deliverable 20) on which the Government will make comments. The final PP (Section F, Deliverable 21) shall incorporate the Government's comments.

The PP is an evolutionary document that shall be updated as elements of the project change (Section F, Deliverable 22). The contractor shall work from the latest Government-approved version of the PP.

The PP requirements include:

a. Project scope
b. Project cost estimate
c. Master Equipment List/Bill of Materials (if applicable)
d. Project schedule including milestones, tasks, and subtasks required in this project
e. Project risks and mitigations
f. Project staff and resources
g. Performance criteria

h. Travel considerations
i. Project deliverables
j. Security considerations
k. Provide for an overall WBS with the appropriate amount of detail and associated responsibilities and partnerships between Government organizations
l. Project transition
m. EVM Plan (if applicable)
n. SCMS customer feedback participation

C.5.1.15 SUBTASK 15 – EARNED VALUE MANAGEMENT (EVM)

If required by project sponsor, the contractor shall employ and report on EVM in the management of this TO. See Section H.13, Earned Value Management**,** for the EVM requirements.

C.5.1.16 SUBTASK 16 – SUPPORT TECHNICAL INTERCHANGE MEETINGS

The contractor shall participate in technical interchange meetings, discussions, milestone reviews, and similar forums with key SCMS and external stakeholders (i.e., subject matter experts (SMEs), sponsors, and users) to coordinate activities and resources; assess the readiness to begin each task within a project; assess schedule status; address technical issues; and review and validate deliverables to ensure that they are accurate, necessary, and sufficient. When requested by the Government, the contractor shall facilitate milestone event reviews in accordance with SCMS SE Process Map (Section J, Attachment X). This encompasses the work required to support these meetings including preparing technical briefs, design briefs, and other artifacts; as well as tracking and closeout of resulting actions (Section F, Deliverable 29 and 37).

C.5.1.17 SUBTASK 17– SUPPORT SCMS CUSTOMER FEEDBACK PROCESS

The contractor shall support the SCMS customer feedback process by providing the SCMS GPL with the SCMS MSNE qualifying event identification (ID) form (Section J, Attachment AB) as required (Section F, Deliverable 45. The SCMS Customer Feedback Process is part of SCMS' performance management initiative to track customer satisfaction to ensure SCMS is delivering quality products which meet and exceed customer expectations (Section J, Attachment AC). The SCMS MSNE qualifying event ID form will be prepared for each qualifying event that occurs on an individual project and shall be identified as part of the PP. Multiple qualifying event ID forms could be required based on the length and complexity of the individual project.

C.5.2 TASK 2 – TRANSITION-IN

The contractor shall update the draft Transition-In Plan (Section F, Deliverable 23) provided with its proposal and provide a final Transition-In Plan as required in Section F (Section F, Deliverable 24). The contractor shall ensure that there will be minimum service disruption to vital Government business and no service degradation during and after transition. The contractor shall implement its Transition-In Plan No Later Than (NLT) ten calendar days after contract award, and all transition activities shall be completed NLT 60 days after TOA (Section F, Deliverable 24).

C.5.3 TASK 3 – TRANSITION-OUT

The contractor shall provide Transition-Out support when required by the Government. The Transition-Out Plan shall facilitate the accomplishment of a seamless transition from the incumbent to an incoming contractor/Government personnel at the expiration of the TO. The contractor shall provide a draft Transition-Out Plan within six months of Program Start (PS) (Section F, Deliverable 25). The Government will work with the contractor to finalize the Transition-Out Plan in accordance with Section F, Deliverable 26. At a minimum, the Transition-Out Plan shall be reviewed and updated on an annual basis (Section F, Deliverable 27). Additionally, the Transition-Out Plan shall be reviewed and updated quarterly during the final Option Period (Section F, Deliverable 27).

In the Transition-Out Plan, the contractor shall identify how it will coordinate with the incoming contractor and/or Government personnel to transfer knowledge regarding the following:

a. Project management processes
b. Points of contact
c. Location of technical and project management documentation
d. Status of ongoing technical initiatives
e. Appropriate contractor to contractor coordination to ensure a seamless transition
f. Transition of Key Personnel
g. Schedules and milestones
h. Actions required of the Government

The contractor shall also establish and maintain effective communication with the incoming contractor/Government personnel for the period of the transition via weekly status meetings or as often as necessary to ensure a seamless transition-out.

The contractor shall implement its Transition-Out Plan NLT 90 calendar days prior to expiration of the TO.

C.5.4 TASK 4 – REQUIREMENTS ANALYSIS AND RECOMMENDATION

The contractor shall provide Requirements Analysis and Recommendation for developmental, new, or modifications to MSNE systems. This includes the use of common tools and artifacts, such as requirements checklists, requirements traceability matrices, and system specifications to guide the work activities and document the results. The products and information from these efforts will inform solution recommendation and other technical and engineering efforts and ensure that the new MSNE system, upgrade, or modification will meet the customer's requirements. In support of this task area, the contractor shall provide the following deliverables, as identified in the PP and PRS:

a. Technical Reports and Data (Section F, Deliverable 30)
b. Drawings and Associated Lists (Section F, Deliverable 39)
c. Test Status Reports (Section F, Deliverable 40)
d. Operations and Maintenance Plans and Procedures (Section F, Deliverable 34)
e. Software and Hardware Documentation (Section F, Deliverable 41)
f. Site Surveys (Section F, Deliverable 35)
g. Integrated Logistics Support (ILS) Strategies Plans and Updates (Section F, Deliverable 38

Aforementioned deliverables are applicable to the below subtasks and shall be allocated as appropriate per the PRS. Deliverable requirements shall then be incorporated into the final Government approved project plan.

C.5.4.1 SUBTASK 1 – CAPTURE AND DOCUMENT TECHNICAL REQUIREMENTS

The contractor shall define and document technical requirements. The contractor shall collect, review, and analyze information that defines the technical aspects of the system. Relevant information includes, but is not limited to, applicable specifications, standards, or constraints; key performance parameters; technical risks; data and electrical interfaces; interoperability; compatibility with legacy, current, and future systems and technologies; communications bandwidth requirements; information/data requirements; quality of service; operating environment; physical configuration/form factors; installation details; size limitations; scalability; firmware, software, and associated applications; verification/validation; certification and accreditation; power requirements; information/physical security; and safety. Sources of information may include system block diagrams, engineering drawings, network diagrams, equipment and system manuals, equipment and material lists, and facility plans and drawings.

C.5.4.2 SUBTASK 2 –DOCUMENT OPERATIONAL AND SUPPORT REQUIREMENTS

The contractor shall document operational requirements. The contractor shall collect, review, decompose, and analyze information in order to create a detailed description of the functionality and capabilities needed to satisfy the current and future operational requirements of a system. Sources of information may include both informal and formal documentation, concepts of operations, mission needs statements, results from sponsor/user interviews and surveys, SOPs, functional block diagrams, and other relevant materials.

The contractor shall document the requirements associated with the fielding and sustainment of MSNE systems to include initial and total operating costs; production; fielding plans; maintenance and technical support; certification and accreditation; operation and maintenance manuals; integrated logistics support; training; set-up instructions; initial equipment/system sparing; documentation, drawing and data management; reliability, maintainability, and availability; supportability; transportability; obsolescence; hardware and software configuration management; and packaging, handling, storage, transportation, and all other relevant factors.

C.5.4.3 SUBTASK 3 – CONDUCT SITE VISITS AND SURVEYS

The contractor shall conduct site visits and survey existing and proposed facilities to validate information and gather additional information. The contractor shall interview and hold discussions with various sponsor/users, observe the operations of current systems, and collect documentation and other information related to system requirements. The contractor shall perform surveys of the facilities, electrical power, heating and cooling systems, existing network/communications infrastructure, cableways, equipment-mounting locations, and other site-specific information to support requirements definition.

C.5.5 TASK 5 – SOLUTIONS RECOMMENDATION

The contractor shall identify, recommend, and document hardware and software solutions that satisfy the requirements associated with new or modified MSNE systems. This includes the preparation and provision of engineering drawings and artifacts necessary to support integration, installation, and verification activities. In support of this task area, the contractor shall provide the following deliverables, as identified in the PP and PRS:

a. Technical Reports and Data (Section F, Deliverable 30)
b. Operations and Maintenance Plans and Procedures (Section F, Deliverable 34)
c. Software and Hardware Documentation (Section F, Deliverable 41)
d. Site Surveys (Section F, Deliverable 35)
e. Technical Documentation Reviews and Technical Inputs (Section F, Deliverable 42)
f. Test Plans and Procedures (Section F, Deliverable 43)
g. Specifications and Standards (Section F, Deliverable 44)
h. Drawings and Associated Lists (Section F, Deliverable 39)
i. Installation, Integration and Implementation Plans (Section F, Deliverable 33)
j. MSNE System & System Enhancements (Section F Deliverable 48)
k. MSNE Software & Software Enhancements (Section F, Deliverable 49)
l. Standardized Material Equipment List (MEL) (Section F, Deliverable 36)

Aforementioned deliverables are applicable to the below subtasks and shall be allocated as appropriate per the PRS. Deliverable requirements shall then be incorporated into the final Government approved project plan.

C.5.5.1 SUBTASK 1 – DEVELOP CONCEPTS

The contractor shall identify, evaluate, and document solution recommendation concepts that address the requirements for the new or modified MSNE systems. The contractor shall identify alternate approaches, list the pros and cons of each, and provide recommendations on the preferred approach. When requested, the contractor shall prepare functional block diagrams, flowcharts, use-case diagrams, DoD architecture framework artifacts, proposed drawings, equipment/software lists, and other engineering tools/outputs that convey the hardware and software aspects of the proposed solution. The contractor shall communicate and collaborate with SCMS and external stakeholders to ensure alignment with requirements, and participate in discussions, technical interchange meetings, and other forums to review recommended approaches.

C.5.5.2 SUBTASK 2 – PREPARE PRODUCTION ENGINEERING PACKAGES

The contractor shall conduct technical and systems engineering activities to prepare production engineering packages to include drawings and related artifacts to support production of the approved solution. The contractor shall recommend the specific composition of the engineering drawing package based on scope and complexity of the solution and the specific needs of the sponsor agency. The contractor shall perform site surveys as requested to validate solution details and verify modifications associated with the physical space in which the MSNE system or modification will be installed. The contractor shall communicate and collaborate with SCMS and external stakeholders throughout this process; prepare for and participate in discussions,

technical interchange meetings, configuration control boards, and other forums at various stages to review progress; and participate in a comprehensive review of the completed package as required by the Government.

C.5.5.3 SUBTASK 3 – CONFIGURE OR DEVELOP SOFTWARE APPLICATIONS

The contractor shall define and perform efforts to configure and tailor existing software applications, or to develop new software applications to meet the needs of new or modified MSNE systems. The configuration and programming activities will be determined by the specific software solution and the required functionality. The contractor shall define and document the detailed functional and performance requirements and the system/subsystem/module specifications as applicable. This may include data inputs and sources, user interface formats/display layouts, processing requirements, data flow/storage requirements, data outputs and destinations, network architecture requirements/components, proposed programming language(s), and network/information security. The contractor shall employ software development best practices that emphasize iterative coding/testing, configuration management of software requirements, traceability of software functionality and testing to operational requirements, documentation, and conduct of user training/familiarization. The contractor shall communicate and collaborate with SCMS and external stakeholders throughout this process; prepare for and participate in discussions, technical interchange meetings, and other forums at various stages to review progress; and participate in a review of the resulting products with project stakeholders.

C.5.5.4 SUBTASK 4 – MANAGE DERIVED REQUIREMENTS

The contractor shall document and manage new requirements identified during the solution analysis and recommendation process and validate these requirements with SCMS and external stakeholders. The contractor shall trace system/software verification to the system/software solutions and subsequently validate them against the documented requirements.

C.5.5.5 SUBTASK 5 – PERFORM CYBERSECURITY ACTIVITIES

The contractor shall perform cybersecurity activities associated with the certification and accreditation of MSNE Systems and the subsequent Government granting of an Authority to Operate (ATO). This includes defining the certification and accreditation requirements, preparation of required artifacts, implementation and validation of IA controls, performing corrective actions, and coordination with the designated approving authority. The contractor shall work with external customers to identify any unique cybersecurity requirements and ensure activities and artifacts are aligned with those requirements.

C.5.5.6 SUBTASK 6 – PREPARE PRODUCTION AND OPERATIONAL TEST PLANS

The contractor shall prepare production and operational test plans, procedures, and other artifacts for new or modified MSNE systems to validate and verify that both hardware and software meet the documented requirements, are traceable to the requirements, and verify that the system, modification integration, and installation was completed in accordance with the system solution documentation. The contractor shall prepare documentation to support System Operational Verification Tests (SOVT) or sponsor agency acceptance verification to demonstrate operation of the completed system and to obtain sign-off from designated sponsor agency representatives.

In addition to formal procedures, verification may employ the use of quality checklists and visual inspections for system cable and hardware/equipment installation.

C.5.5.7 SUBTASK 7 – PREPARE INSTALLATION AND INTEGRATION PLANS

The contractor shall prepare plans to guide the integration/installation of a new or modified MSNE system, its installation at the sponsor agency's site, and the transition from legacy systems to the new MSNE system. The contractor shall leverage the production engineering drawing package, project and equipment delivery schedules, the sponsor agency's facility modification plans, and constraints imposed by ongoing operations. The contractor shall include activities and sequencing of activities such as, but not limited to, roles and responsibilities, required resources, and associated schedules in accordance with new, upgraded, or modified MSNE systems.

C.5.5.8 SUBTASK 8 – IDENTIFY EQUIPMENT AND MATERIAL

The contractor shall provide technical and engineering expertise to identify equipment and material required for new or modified MSNE systems. This includes market research to identify sources for candidate equipment and materials that meet the required technical and performance standards, preparation of a list of materials, preparation of procurement specifications and requirements, and the validation of equipment/material suitability once received.

C.5.6 TASK 6 – INTEGRATION, INSTALLATION, VERIFICATION, AND VALIDATION

The contractor shall perform the following technical and production engineering efforts associated with the integration, installation, verification, and validation of new or modified MSNE systems. These efforts are guided by, and accomplished in accordance with production engineering drawing packages, integration plans, installation plans, verification/validation plans, and other technical data and artifacts. In support of this task area, the contractor shall provide the following deliverables, as identified in the PP and PRS:

a. Technical Reports and Data (Section F, Deliverable 30)
b. Test Status Reports (Section F, Deliverable 40)
c. Operations and Maintenance Plans and Procedures (Section F, Deliverable 34)
d. Software and Hardware Documentation (Section F, Deliverable 41)
e. Drawings and Associated Lists (Section F, Deliverable 39)
f. MSNE System & System Enhancements (Section F Deliverable 48)
g. MSNE Software & Software Enhancements (Section F, Deliverable 49)
h. Technical Operations, Maintenance, Training Manuals and Materials (Section F, Deliverable 31)
i. Installation/Integration/Implementation Plans (Section F, Deliverable 33

Aforementioned deliverables are applicable to the below subtasks and shall be allocated as appropriate per the PRS. Deliverable requirements shall then be incorporated into the final Government approved project plan.

C.5.6.1 SUBTASK 1 – INTEGRATION AND INSTALLATION

The contractor shall provide technical support for the physical integration, assembly, and

installation of MSNE systems, mounts, cabling, and other hardware, including integration with the physical, electrical, and network infrastructure at user sites. This support is for production efforts that include cable fabrication, routing, and connection; assembly of equipment and components; and equipment installation and mounting. It is not intended that industrial-type activities such as the fabrication of equipment mounts and metalwork will be accomplished under this TO.

C.5.6.2 SUBTASK 2 – PROVIDE TECHNICAL GUIDANCE AND PRODUCTION ENGINEERING

The contractor shall provide technical guidance and production engineering efforts required to support integration of the hardware and software components and materials comprising a new MSNE system or modification of an existing MSNE system. The contractor may provide technical guidance and/or actively participate in the installation and configuration of software applications and components. These activities include the red-lining of the production engineering drawing package and integration plan, resolution of engineering and software issues and discrepancies, and identification of corrective actions required to resolve discrepancies identified during production testing.

The contractor shall provide technical guidance and production engineering efforts required to support the installation of new MSNE systems or modifications to existing MSNE systems. The contractor shall provide technical guidance and production engineering activities during the physical installation of the system/modification, and its integration with the facilities' electrical and network/communications infrastructure, to ensure compliance with the production engineering drawing package and installation plan. The contractor shall provide technical guidance, or actively participate in the set-up and configuration of software applications and other system components. These activities include the red-lining of the production engineering drawing package and installation plan, resolution of engineering and software issues and discrepancies, delivery of new system familiarization training, and identification of corrective actions required to resolve discrepancies identified during production testing. The contractor shall communicate and coordinate on-site efforts with SCMS-designated customer representatives to manage expectations, recommend necessary support, and provide status of ongoing efforts.

C.5.6.3 SUBTASK 3 – CONDUCT VERIFICATION AND VALIDATION

The contractor shall conduct verification and validation of new systems and modifications to existing systems in accordance with plans and procedures. Verification shall be performed by the contractor at various locations and at various points throughout the project life cycle of a new or modified MSNE system including pre-delivery of equipment (factory acceptance testing), equipment receipt, integration, installation, and SOVT/sponsor agency acceptance. Efforts may include conducting verifications, recording of results, data reduction and analysis of results, status reports, and recommendations for corrective actions to address defects and deficiencies when defined performance standards and specifications are not met.

C.5.7 TASK 7 – OPERATIONS AND SUSTAINMENT SUPPORT

The contractor shall perform the following efforts associated with the operation and sustainment of existing MSNE systems. In support of this task area, the contractor shall provide the following

deliverables, as identified in the PP and PRS:

a. Technical Reports and Data (Section F, Deliverable 30)
b. Test Status Reports (Section F, Deliverable 40)
c. Operations and Maintenance Plans and Procedures (Section F, Deliverable 34)
d. Software and Hardware Documentation (Section F, Deliverable 41)
e. Technical Operations, Maintenance, Training Manuals and Materials (Section F, Deliverable 31)
f. Logistics Support Status Report (Section F, Deliverable 32)
g. MSNE System & System Enhancements (Section F Deliverable 48)
h. MSNE Software & Software Enhancements (Section F, Deliverable 49)
i. ILS Strategies, Plans and Updates (Section F, Deliverable 38)
j. Installation/Integration/Implementation Plans (Section F, Deliverable 33)

Aforementioned deliverables are applicable to the below subtasks and shall be allocated as appropriate per the PRS. Deliverable requirements shall then be incorporated into the final Government approved project plan.

C.5.7.1 SUBTASK 1 – PREPARE TRAINING ACTIVITIES

The contractor shall prepare and update training plans, packages, and other related artifacts, and conduct training for users and other stakeholders on the operation and maintenance of MSNE systems. Training formats may include practical/hands-on, classroom, computer-based, or some combination, and can be in response to requirements to address gaps in current user proficiency or part of a more comprehensive training program.

C.5.7.2 SUBTASK 2 – PROVIDE TECHNICAL AND MAINTENANCE EXPERTISE

The contractor shall provide technical and maintenance expertise to resolve technical and operational issues and failures associated with MSNE systems in response to customer requests. These efforts include planned, routine requests/responses and corrective maintenance, but may require an immediate response when requested, in order to bring MSNE systems online as quickly as possible to minimize negative impacts to mission-critical operations.

C.5.7.3 SUBTASK 3 – PERFORM OPERATIONS AND MAINTENANCE

The contractor shall perform efforts associated with the operations and maintenance of MSNE systems. Operations support includes performance assessments, security and vulnerability assessments, evaluation of processes, workflow analysis, recommendations to address deficiencies or improve current performance, and implementation of approved recommendations. Efforts associated with system maintenance include development of maintenance concepts, plans, and procedures; conduct of maintenance activities – equipment testing; hardware/software installation, removal, replacement, and repair; and recommended actions required to keep the system operating within defined performance standards.

C.5.7.4 SUBTASK 4 – PROVIDE INTEGRATED LOGISTICS SUPPORT

The contractor shall provide technical and engineering efforts related to the integrated logistics support of MSNE systems. This includes the conduct of reliability, maintainability, and availability assessments; review and update of technical data and documentation; evaluation of

supply support and sparing strategies; evaluation of system service agreements and warranties; software maintenance planning and support; and the review and assessment of logistics strategies, plans, and other related artifacts. The contractor shall provide recommendations to address any identified deficiencies.

C.5.7.5 SUBTASK 5 – ADMINISTRATION AND SUPPORT OF SOFTWARE SYSTEMS

The contractor shall support the administration of systems and development of software/applications supporting the system which may include SharePoint, SQL, ASP.NET, control systems (AMX, Crestron, etc.), virtual machine, and various IT systems. The contractor shall provide technical and maintenance expertise to resolve operational issues and failures in response to SCMS' sponsor requests. These efforts include planned, routine requests/responses, and corrective maintenance, but may require an immediate response when requested, in order to bring systems online as quickly as possible to minimize negative impacts to mission-critical operations.

C.5.8 TASK 8 – RESEARCH, DEVELOPMENT, TEST, AND EVALUATION (RDT&E)

The contractor shall perform the following efforts associated with RDT&E of emerging technologies, equipment, and systems that may be used to address the technical and operational requirements of developmental MSNE systems or modifications to MSNE systems. In support of this task area, the contractor shall provide the following deliverables, as identified in the PP and PRS:

a. Technical Reports and Data (Section F, Deliverable 30)
b. Test Status Reports (Section F, Deliverable 40)
c. Operations and Maintenance Plans and Procedures (Section F, Deliverable 34)
d. Software and Hardware Documentation (Section F, Deliverable 41)
e. Technical Documentation Review and Technical Inputs (Section F, Deliverable 42)
f. Test Plans and Procedures (Section F, Deliverable 43)
g. Specifications and Standards (Section F, Deliverable 44)
h. Drawing and Associated Lists (Section F, Deliverable 39)
i. Installation, Integration and Implementation Plans (Section F, Deliverable 33)
j. Site Survey (Section F, Deliverable 35)
k. MSNE System & System Enhancements (Section F Deliverable 48)
l. MSNE Software & Software Enhancements (Section F, Deliverable 49)
m. Standardized MEL (Section F, Deliverable 36)

Aforementioned deliverables are applicable to the below subtasks and shall be allocated as appropriate per the PRS. Deliverable requirements shall then be incorporated into the final Government approved project plan.

C.5.8.1 SUBTASK 1 – EVALUATE EMERGING TECHNOLOGIES

The contractor shall research and evaluate new and emerging technologies to determine their ability to meet technical and performance requirements and specifications. The contractor shall conduct engineering studies to assess the readiness of the technology; evaluate risk factors including technical maturity, reliability, and suitability; and determine the availability of potential vendors and suppliers.

C.5.8.2 SUBTASK 2 – CONDUCT FEASIBILITY STUDIES ON NEW TECHNOLOGIES

The contractor shall conduct studies to determine the feasibility of applying new technologies to the development or modification of MSNE systems. The contractor shall assess and document the technical, operational, and programmatic risks that would be incurred; identify the associated pros and cons; and determine the probability of successful implementation.

C.5.8.3 SUBTASK 3 – CONDUCT ANALYSIS OF ALTERNATIVES

The contractor shall produce analysis of alternatives to evaluate potential solutions and provide recommended alternatives that can be brought to bear to satisfy the technical and operational needs of the Government. Considerations shall address cost, schedule, and performance tradeoffs, ability to support operational requirements, suitability for the intended environments, and ability to meet defined measures of effectiveness and performance.

C.5.8.4 SUBTASK 4 – PERFORM PROTOTYPE TECHNICAL AND ENGINEERING EFFORTS

The contractor shall perform technical and engineering efforts required to design prototype, developmental, or low-rate initial production of new or modified MSNE systems to support the demonstration and test and evaluation of new technologies, equipment, and system concepts. Efforts include the development of system conceptual designs; functional, allocated, and product baselines; development of mockups; development of a detailed design and engineering drawing package; system integration and installation plans; and test and evaluation plans and procedures. The contractor shall develop and program new software applications or modify existing applications. The contractor shall conduct systems engineering technical reviews to ensure required entrance and exit criteria is satisfied at designated milestones.

C.5.8.5 SUBTASK 5 – PROVIDE TECHNICAL GUIDANCE AND PRODUCTION ENGINEERING

The contractor shall provide technical guidance and production engineering efforts required to support the integration and installation of MSNE systems or to modify existing MSNE systems in accordance with overarching integration and installation plans. The contractor shall provide technical guidance or actively participate in the installation and configuration of software applications and components. The contractor shall perform production verification tests to ensure compliance with the system's design and engineering drawing package. If mockups are used, they may be fabricated prior to the integration and installation of the prototype, developmental, or low-rate initial production MSNE system.

C.5.8.6 SUBTASK 6 – CONDUCT DEVELOPMENTAL TESTING

The contractor shall provide technical and engineering services to support and conduct coordination of developmental test and evaluation and operational test and evaluation in accordance with the test plan and associated procedures. Tests will be performed by various stakeholders at different locations to include the manufacturer/vendor, Government and contractor labs, environmental test labs, independent test and certification agencies, and customer sites. Efforts also include test status reports, recording of test results, data reduction and analysis of test results, test reports, and recommendations for follow-on actions to address test failures.